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EXAMINER	
AVELLINO, JOSEPH E	

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2143	20

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/384,932	Applicant(s) TONDERING, CLAUS	
	Examiner Joseph E. Avellino	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-28 are pending in this examination.

Claim Rejections - 35 USC § 112

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 10, 14, 17, 18, 22, 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not sufficiently provide for enabling one of ordinary skill in the art the ability to regulate usage of the resource by the at least two processes based on the indicated available amount of credit and allowing increased further usage of the resource by the alt least two processes based on said decreasing of said value. If this is an oversight by the Examiner, the Applicant is invited to point out the relevant portions of the disclosure that pertain to the aforementioned limitations.

3. Claims 1, 10, 14, 17, 18, 22, 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The claims 1, 10, 17, 18, 22, and 24 recite the limitation, "...allowing increased usage of the resource by the at least two processes based on said decreasing". This is unclear. Since previous limitations of the claim recite that the value is a total amount of current usage of the resource, by decreasing the value one is decreasing the current usage of the resource by the at least two processes. It is impossible to allow increased usage of the resource while decreasing the value indicating the usage of the resource. The value will inherently increase when the resource is used. Correction is required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 4, 5, 8-10, 17-18, and 21-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe (USPN 6,125,396).

6. Referring to claims 1 and 26, Lowe discloses a method of managing usage of a resource (i.e. access rates to a shared file server) in a network system, the network system comprising:

indicating a value representing total amount of usage of the resource by at least two processes using the resource (it is inherent that the system taught by Lowe maintains some form of memory that stores the amount of resource usage in the system

by the statement "based on current usage of shared resource 428 by other clients..." col. 4, line 30; col. 7, lines 15-16);

indicating an available amount of credit (usage reserve) for usage of the resource by the at least two processes based on said value (e.g. abstract; Figure 3, reference character 324; col. 5);

decreasing said total resource usage according to a function of time (since Lowe discloses that the process repeats in intervals, such as per second, it inherently decreases the total resource usage based on a function of time) (col. 5, line 55-62; col. 7, line 39 to col. 8, line 45)

regulating usage of the resource by the at least two processes based on the indicated available credit and allowing increased usage of the resource by the at least two processes based on said decreasing (the example taught by Lowe discloses that at the one second interval the desired usage rate is 10 blocks/second, the second time interval is 7 blocks/second, third time interval is 7 blocks/second, fourth time interval is 12 blocks/second) (Figure 4; col. 5, line 55-62; col. 7, line 39 to col. 8, line 45).

Lowe does not disclose that the total resource usage id decreased using a preset amount per unit of time. However it is well known and expected in the art that a leaky bucket system has the ability to have a predetermined (i.e. constant) drain level (i.e. constant rate usage by the clients of Lowe) and would have been obvious to one of ordinary skill in the art to provide for decreasing the value according to a predetermined function of time for simplicity of programming and to provide for the server to exercise

some authority as to the rate at which clients may download data, thereby enhancing overall QoS for all the clients as well as for a more efficient bandwidth monitoring.

7. Referring to claim 4, Lowe discloses the network operates in a real-time networking environment (col. 6, lines 49-67). Although the embodiment primarily discussed in Lowe refers to a non-real-time client, the network is a real-time environment. Furthermore Lowe discloses that real-time clients usually have a reserve set at zero, however "the configuration data on which the reserve for the real-time clients is based on could be changed" which indicates that a reserve can be set at a non-zero number, indicating the system can work for a real-time client (col. 6, lines 53-63).

8. Referring to claim 5, Lowe discloses the method is modeled as a leaky bucket (Figure 2; col. 3, line 55 to col. 4, line 53).

9. Referring to claim 7, Lowe discloses regulating usage of the resource comprises modifying the available credit by adjusting a maximum resource usage value (reserve value) (col. 5, line 55-65).

10. Referring to claim 8, Lowe discloses notifying the process (client) of the availability of the credit when the indicated available credit is greater than a requested usage amount if the indicated available credit is initially less than the requested usage

amount (e.g. client requests a rate at 20 blocks/second, resource coordinator 420 notifies the client that a rate of 10 blocks/second has been allotted to the client) (col. 7, lines 12-23).

11. Referring to claim 9, Lowe discloses notifying the process (client) comprises sending a message to a network address (it is inherent that a client on a network as a network address and that any message sent to the client is sent to the address of the client) of the process (client) when the requested usage amount is greater than the available credit (col. 7, lines 12-23).

12. Claim 18, is rejected for similar reasons as stated above. Furthermore, Lowe discloses a network including a plurality of devices, comprising:

a plurality of resources running in the network ("...governing access to computer resources") (col. 5, lines 1-9);

computer software, residing on a computer readable medium at each device (Lowe discloses that the client governs its own access to shared resource 428, col. 7, lines 20-23, therefore the client must have software residing on computer readable medium at each device) accessing the plurality of resources.

13. Referring to claim 22, Lowe discloses the available amount of credit comprises a difference between a maximum resource usage allocated to the at least two processes

and the amount of resource currently used by the at least two processes (col. 8, lines 40-45).

14. Referring to claim 23, Lowe discloses the available amount of credit increases per unit of time by an estimated value of the resource that becomes available per unit of time (col. 8, lines 17-23).

15. Claims 17, 21, and 24 are rejected for similar reasons as stated above. Furthermore Lowe discloses the system comprises computer software, residing on a computer-readable medium at a device connected to a network (col. 3, lines 10-25).

16. Referring to claim 25, Lowe discloses a method of managing usage in a resource as stated in the claims above. Lowe does not disclose determining a priority for a process for a resource and allocating the resource based on the priority. However it is well known in the art that higher priority processes (i.e. interrupt threads in a computer, master computer nodes in a network, etc.) get preference over lower priority processes (i.e. garbage collection, other menial system processes, etc.) for resource contention since they are of higher importance. Therefore it would have been obvious to one of ordinary skill in the art to provide for prioritizing resource allocation based on the priority of the processes to allow for higher priority processes not to be impeded by a lower priority process.

Claims 2, 3, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Overby, Jr. et al. (USPN 6,016,503) (hereinafter Overby).

17. Referring to claim 2, Lowe discloses a method of managing usage of a resource in a network system, however Lowe does not disclose that the resource comprises one of memory space or system processor time. Lowe does, though, disclose that "an embodiment of the invention applies to any resource with a limited capacity that is shared concurrently by users of the resource" (col. 9, lines 13-15). In analogous art, Overby discloses another method of managing usage of a resource in a network system wherein the shared resource is memory space (control the allocation of memory) (col. 5, lines 13-15). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Lowe with Overby to provide a more efficient method of memory utilization, thereby reducing processing overhead and wasting unused memory on processes which do not require their total allotted memory space.

18. Referring to claim 3, Lowe discloses a method of managing usage of a resource in a network system. Lowe does not disclose that the network comprises an embedded computer system. In analogous art, Overby discloses another method of managing usage of a resource wherein the network comprises an embedded computer system (col. 1, lines 13-20). It would be obvious to a person of ordinary skill in the art at the

time the invention was made to combine the teaching of Lowe with Overby to provide a more efficient method of memory utilization, thereby reducing processing overhead and wasting unused memory on processes which do not require their total allotted memory space.

19. Claims 19, and 20 are rejected for similar reasons as stated above.

Claim 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Garner et al. (USPN 6,112,085) (hereinafter Garner).

20. Referring to claim 6, Lowe discloses a method for managing usage of a resource as stated in the claims above. Lowe does not disclose the method further comprising determining the priority of the resource and allocating the resource in response to an increased priority of the resource. Garner discloses:

determining a priority of the resource (col. 58, lines 57-63); and

allocating the resource based on the priority of the resource (col. 58, line 64-67).

It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Garner with Lowe to allow preferred resources to be allocated to increase overall speed and efficiency of the network.

21. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Harrington et al. (USPN 6,289,012) (hereinafter Harrington).

22. Referring to claim 11, Lowe discloses the method of managing a plurality of resources as stated in the claims above. Lowe further discloses associating with each software tool a maximum usage level (col. 7, lines 13-23). Lowe does not disclose allocating a descriptor representative of any of the software tools to any of the plurality of devices, although this can be inferred since a request from the client process to the resource coordinator 420 to request access to the shared resource 428 (col. 7, lines 13-15). Harrington discloses allocating a descriptor (i.e. hash ID) representative of any of the software tools to any of the plurality of devices (col. 15, lines 46-50). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Lowe with Harrington for more efficient data downloads and data resiliency as supported in Harrington (col. 3, lines 18-34).

23. Referring to claim 12, Lowe discloses:

decrementing the maximum usage level of the software tool in response to the use of the resource associated with the tool by any of the plurality of devices (col. 7, line 40 to col. 9, line 9);

calculating an available credit based on the usage of the resource associated with the tool as a function of the maximum usage level (col. 7, line 40 to col. 9, line 9); and

indicating to a device waiting to use the resource associated with the tool of the available credit (col. 7, line 40 to col. 9, line 9).

24. Referring to claim 14, Lowe further discloses incrementing the maximum usage level (assigned rate) to at least correspond to the specified usage level (i.e. usage level available on the resource) (e.g. abstract).

25. Referring to claim 15, Lowe in view of Harrington discloses disclose the method of managing a plurality of resources as stated in the claims above. Although Lowe discloses allowing a resource to exceed its assigned rate, Lowe does not specifically state overriding the usage level to allow a device access to one of the plurality of resources. Harrington discloses when a pre-allocated memory element is not available, the list will override the reallocated space and the list "grows to add additional memory elements to the List" (col. 15, lines 25-30). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Low with Harrington for more efficient data downloads and data resiliency as supported in Harrington (col. 3, lines 18-34).

26. Referring to claim 16, Lowe in view of Harrington disclose the method of managing a plurality of resources as stated in the claims above. Harrington further discloses destroying the software tool in response to a request from one of the devices (col. 16, lines 52-56 and Figure 26). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Harrington with

Lowe to allow for efficient memory management and to facilitate garbage collection in the system.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of Ho et al. (USPN 6,578,082) (hereinafter Ho).

27. Lowe discloses a method of managing usage of resources as stated in the claims above. Lowe does not specifically disclose the preset amount represents an estimated amount of resource which comes available per unit of time. Ho discloses preset amount represents an estimated amount of resource which comes available per unit of time (col. 7, lines 18-41). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Lowe with Ho to increase efficiency of the system by not calculating the actual resource availability, rather the estimated value, thereby reducing processing overhead and increasing throughput.

Response to Amendment

28. Applicants other arguments dated February 3, 2003 have been considered but are not persuasive.

29. In the remarks, Applicant argued in substance that (1) Lowe does not disclose decreasing the total resource value according to a predetermined function of time.

30. As to point (1), decreasing a total resource value according to a predetermined function of time is a well known and obvious feature in many "leaky bucket" models. Furthermore, it is well known and expected in the art that a leaky bucket system has the ability to have a predetermined (i.e. constant) drain level (i.e. constant rate usage by the clients of Lowe) and would have been obvious to one of ordinary skill in the art to provide for decreasing the value according to a predetermined function of time for simplicity of programming and to provide for the server to exercise some authority as to the rate at which clients may download data, thereby enhancing overall QoS for all the clients as well as for a more efficient bandwidth monitoring.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (703) 305-7855. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (703) 308-5221. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

JEA
February 9, 2004

DAVID WILEY
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